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——The bestiarians in Belgium have appropriately united with the antivaccinationists in the publication of a journal entitled The Friend of the People. In Paris and in Philadelphia the anti-vivisection societies have modified their titles so as to state that their object is to regulate, and not to abolish vivisection. To such a service reasonably executed, no one should object. However our hopes of rational conduct on their part, are somewhat abated by the addresses delivered by some of their members. It is still asserted in Philadelphia, that no benefit to physiological science has been derived from vivisection! In Paris a lady member denounces the experiments made by Pasteur in the search for the methods of attenuating animal poisons, declaring that it were better to endure rabies than tolerate the (?) cruelties inflicted on animals by Pasteur.

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## RECENT LITERATURE.

COULTER'S ROCKY MOUNTAIN BOTANY.[1]—This neat manual, in its substantial binding, good paper and excellent typography, reminds one every way of the well-known Gray's Manual, of which it is, in fact, designed to be a companion volume. It is intended for use in the region lying between the 100th meridian on the east and the Great basin on the west, and extending from the northern line of New Mexico northward to the British boundary. Its range, therefore, includes Colorado, Wyoming, Montana, Western Dakota, Western Nebraska and Western Kansas.

There are several features of the book which are especially noteworthy. In it we have for the first time, so far as we are aware, an American manual of botany with the gymnosperms standing in proper relation to the angiosperms. The outline of the arrangement is as follows, viz:

- Series I. PHÆNOGAMIA.
  - Class I. ANGIOSPERMÆ.
    - Sub-class I. Dicotyledons.
    - Sub-class II. Monocotyledons.
  - Class II. GYMNOSPERMÆ.

- Series II. PTERIDOPHYTA.
  - Class I. LYCOPODINÆ.
  - Class II. FILICINÆ.
  - Class III. EQUISETINÆ.

As indicating further the modern views held by the author, a remark in the preface is worth quoting, viz: "The term 'cryptogam has been discarded as the correlative of phænogam, and 'Pteridophyta' (vascular cryptogams) is used as the name of the second great series of plants." It is gratifying to note these signs of a recognition, in a systematic manual, of the doctrine of evolution, and of the significance of the structural homologies which are now familiar to every vegetable anatomist.

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[1] *Manual of the Botany* (*Phænogamia and Pteridophyta*) *of the Rocky Mountain Region* from New Mexico to the British boundary. By JOHN M. COULTER, Ph.D., professor of botany in Wabash College and editor of the *Botanical Gazette*. Ivison, Blakeman, Taylor & Co., New York and Chicago., 1885, pp. xvi, 454, 28.

We wish the author had been entirely consistent in his treatment of this part of the subject. Thus, if we consider the gymnosperms to occupy the position given them in this book, we must regard the cone (in conifers) as the homologue of the *female flower* of angiosperms, and not as an ament (*i. e.*, a spike of flowers). The so-called "spikes" of Lycopodinæ and the similar structures (male and female cones) of the conifers are so clearly homologous as not to require any discussion here; and this precludes the use of the old term "ament." In another case we notice the continued use of an antiquated term where the leaves of the Filicinæ are called "fronds." In the characters given for the class (p. 436), as well as the ordinal ones, the leaves are called leaves, with the word "frond" following in parenthesis, but in the generic and specific descriptions the old term alone is used, except in the Rhizocarpæ. We have no doubt whatever as to the author's real views upon these points, and rejoice that he has, even in part, succeeded in securing a better arrangement and a more modern nomenclature, and only regret that it was not possible to carry out in full the reform so well begun.

We find by calculations made by us that the area of the region included in this book is but little less than that included in Gray's Manual. It is interesting to notice that the number of Rocky mountain plants is wonderfully near to that of the Eastern region. Doubtless when the Western region has been as fully explored, it will have a greater number of species than the Eastern. We give below the comparisons for the different groups:

| | ORDERS. | | GENERA. | | SPECIES. | |
|---|---|---|---|---|---|---|
| | *Coulter.* | *Gray.* | *Coulter.* | *Gray.* | *Coulter.* | *Gray.* |
| Polypetalæ . . . . . | 38 | 48 | 176 | 255 | 624 | 629 |
| Gamopetalæ. . . . . | 23 | 33 | 181 | 289 | 683 | 751 |
| Apetalæ. . . . . . . . | 14 | 24 | 48 | 70 | 166 | 187 |
| Dicotyledons . . . . . | 75 | 105 | 305 | 614 | 1473 | 1567 |
| Monocotyledons . . . | 13 | 22 | 104 | 174 | 347 | 670 |
| ANGIOSPERMS . . . . . . . | 88 | 127 | 409 | 788 | 1820 | 2237 |
| GYMNOSPERMS . . . . . . | 2 | 1 | 6 | 8 | 16 | 21 |
| PHÆNOGAMIA . . . . . | 90 | 128 | 415 | 796 | 1836 | 2258 |
| PTERIDOPHYTA . . . | 7 | 4 | 19 | 28 | 45 | 90 |
| Total . . . . . . . . . . . . | 97 | 132 | 434 | 824 | 1881 | 2348 |

Comparing the number of genera and species for half a dozen orders, the following interesting results are obtained:

| | GENERA. | | SPECIES. | |
|---|---|---|---|---|
| | *Coulter.* | *Gray.* | *Coulter.* | *Gray.* |
| Leguminosæ | 20 | 35 | 143 | 98 |
| Rosaceæ | 26 | 18 | 65 | 72 |
| Compositæ | 83 | 85 | 357 | 288 |
| Ericaceæ | 10 | 28 | 19 | 67 |
| Cyperaceæ | 8 | 15 | 108 | 247 |
| Gramineæ | 48 | 66 | 129 | 168 |

As to the number of species common to the two regions, we have space for but a few comparisons. Taking a few of the orders as they occur at the beginning of the book, we obtain the following results, confining our comparisons to *native species* only, as in the previous cases:

| | NUMBER OF SPECIES. | | |
|---|---|---|---|
| | *In Coulter.* | *In Gray.* | *Common to both.* |
| Ranunculaceæ | 57 | 54 | 24 |
| Berberidaceæ | 2 | 5 | 0 |
| Nymphæaceæ | 2 | 6 | 1 |
| Papaveraceæ | 2 | 2 | 0 |
| Fumariaceæ | 5 | 7 | 1 |
| Cruciferæ | 63 | 46 | 17 |
| Capparidaceæ | 7 | 1 | 1 |
| Violaceæ | 9 | 17 | 5 |
| Polygalaceæ | 3 | 14 | 1 |

No better argument as to the need of this book can be made than that derived from this comparison, which indicates that not more than about one-third of the Rocky Mountain species are described in Gray's Manual.—*Charles E. Bessey.*

THE CATALOGUE OF LIZARDS IN THE BRITISH MUSEUM, new edition, Vols. I and II.—This important work, by Dr. G. A. Boulenger, fills a desideratum in zoölogy which is of long standing. Previous to the publication of these volumes Dr. Boulenger had given us in the *Ann. and Mag. Nat. Hist.*, 1884, p. 117, a synopsis of the families of existing Lacertilia, as understood by him. The classifications of Duméril and Bibron and of Gray, still generally in use, are regarded as unnatural, and the osteology and structure of the tongue as well as the presence or absence and structure of the dermal ossifications are put forward as characters of primary importance. In this respect Cope is largely but not entirely followed. Twenty families of *Lacertilia vera* are recognized, separated into three series, the first (Gecconidæ, Eublepharidæ) with smooth tongue and the clavicle dilated and loop-shaped proximally; the second without the latter character, while